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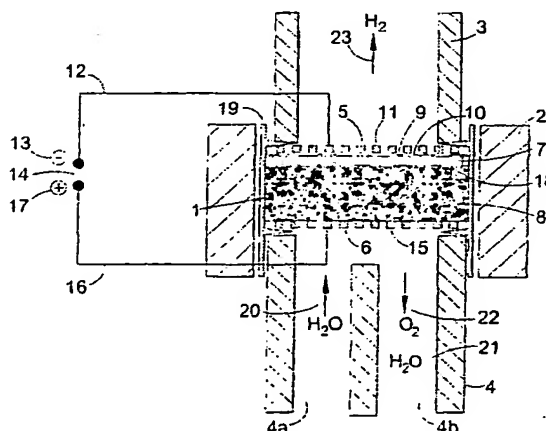
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(54) Title: STEAM ELECTROLYSIS



(57) Abstract: The present invention relates to a method of producing hydrogen comprising: contacting steam (20) with a proton conducting membrane (7) supported on a porous redox stable substrate (8), through said substrate (8). The membrane (7) is non-permeable to molecular gas and to oxide ions. A DC voltage is applied across an anode (15) coupled to the substrate side of the membrane and a cathode (9, 11) coupled to its other side so as to dissociate at least part of the steam (20), into protonic hydrogen and oxygen at said anode (15). The protonic hydrogen passes through the membrane and forms molecular hydrogen (23) at the cathode (9, 11).

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